

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
4 August 2005 (04.08.2005)

PCT

(10) International Publication Number
WO 2005/070992 A3

(51) International Patent Classification⁷: **H01B 1/12**,
H01L 51/20, 51/30

(21) International Application Number:
PCT/JP2005/001438

(22) International Filing Date: 26 January 2005 (26.01.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2004-018357 27 January 2004 (27.01.2004) JP

(71) Applicant (for all designated States except US): **CANON KABUSHIKI KAISHA** [JP/JP]; 3-30-2, Shimomaruko, Ohta-ku, Tokyo, 1468501 (JP).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **NAKAMURA, Shinichi** [JP/JP]; c/o CANON KABUSHIKI KAISHA, 3-30-2, Shimomaruko, Ohta-ku, Tokyo, 1468501 (JP).

(74) Agents: **OKABE, Masao** et al.; No. 602 Fuji Building, 2-3, Marunouchi 3-chome, Chiyoda-ku, Tokyo 100-0005 (JP).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

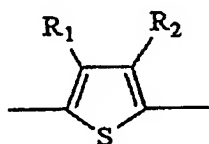
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

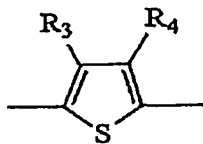
(88) Date of publication of the international search report:
27 October 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: CONJUGATED THIOPHENE COMPOUND, COMPRISING PERFLUORINATED AND ALKYLATED SIDECHAINS, CONDUCTIVE ORGANIC THIN FILM CONTAINING THE COMPOUND, AND FIELD-EFFECT TYPE ORGANIC TRANSISTOR EMPLOYING THE THIN FILM



(I)



(II)

(57) Abstract: A π -conjugated compound has rings represented by Formulae (I) and (II), an odd number of rings being interposed between the rings of Formula (I), and an odd number of rings being interposed between the rings of Formula (II); where R_1 and R_2 are hydrogen or a substituted or unsubstituted linear, cyclic, or branched alkyl group of 1 to 20 carbon

atoms, at least one of R_1 and R_2 being not hydrogen; and R_3 and R_4 are hydrogen or a substituted or unsubstituted linear, cyclic, or branched perfluoroalkyl group of 1 to 20 carbon atoms.